

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-22 (Previously Canceled)

23-27 (Previously Canceled)

28. (Previously Presented) *Chlamydomonas reinhardtii* Str6 deposited with the Culture Collection of Algae and Protozoa on 1 July 2003 under Culture Collection of Algae and Protozoa accession number 11/129.

29. (Previously Canceled)

30. (Currently Amended) A mutant alga of *Chlamydomonas* spp. capable of hydrogen production under illuminated conditions through action of a hydrogenase, where the hydrogenase comprises HydA, and the alga having a mutation that reduces or eliminates activity of a mitochondrial transcription factor, where the mitochondrial transcription factor comprises Moc1, whereby said alga has increased hydrogen production compared to wild-type alga.

31-35. (Canceled)

36. (Currently Amended) A mutant alga as claimed in claim 35 30, wherein the alga is *Chlamydomonas reinhardtii*.

37. (Canceled)
38. (Currently Amended) A substantially pure culture of a mutant alga of Chlamydomonas spp. capable of hydrogen production under illuminated conditions through the action of a hydrogenase, where the hydrogenase comprises HydA, and having a mutation that reduces or eliminates the activity of a mitochondrial transcription factor, where the mitochondrial transcription factor is comprises Moc1, whereby said alga has increased hydrogen production compared to wild-type alga.
- 39-43. (Canceled)
44. (Currently Amended) A substantially pure culture as claimed in claim 43 ~~38~~, wherein the alga is *Chlamydomonas reinhardtii*.
45. (Previously presented) A substantially pure culture of *Chlamydomonas reinhardtii* *Stm6* deposited with the Culture Collection of Algae and Protozoa on 1 July 2003 under accession number 11/129.